



INFORMATION TECHNOLOGY AND SOCIAL CONTROLS IN NORTH KOREA

By Scott Thomas Bruce

Abstract

To mitigate the risk of social unrest, the North Korean government has attempted to integrate information technology into its system of social controls. Cell phones and other communications technology are a material incentive for the North Korean elite, as well as a means of controlling information for the population. Penalties for possession of forbidden technology or the misuse of approved technology are harsh. Although the North Korean government seems confident that this social control system will allow the DPRK to take advantage of the positive elements of these technologies while minimizing the social impact on the population, the North Koreans privileged enough to access this technology can communicate in ways that are unprecedented in the history of the state.

Rather than expecting cell phones, the intranet and the Internet to induce a radical change in the North Korean state, policy-makers should adopt a more cautious approach. Overt support for information technology as a tool for circumventing state controls will result in further restrictions. Financially supporting technology in North Korea is very possible, but limited in impact due to the control mechanisms of the state, international sanctions, and the risks associated with investing in North Korea. A modest strategy would be to feed information into the DPRK that will support development that necessitates links to institutions abroad and integration with the region.

Key words: *North Korea, social unrest, Koryolink, information technology, Internet*

Introduction

Following the Arab Spring, there is hope that access to information technology (IT) and social media will have a liberalizing effect on authoritarian states. Optimists believe that increased access to information will undermine authoritarian governments and bolster democratic social movements. Other case studies conclude that information technology can only weaken authoritarian states.¹ Pessimists, on the other hand, have emphasized the potential of the information technology to support authoritarian regimes through information control, surveillance, and propaganda.²

For the purposes of this analysis, we will assume that technology does not have an intrinsic liberalizing effect. We will consider technology to be a tool with constructive and disruptive effects; it is a tool with the potential to strengthen or undermine both institutional and distributed actors. These impacts can be positive or negative depending on the location and interests of the parties involved. Applications of information technology that undermine institutional interests can coordinate popular protests against authoritarian regimes, or it can support criminal activity or undermine the rule of law in democratic states. In short, the same technology that Tunisians used to organize popular protests against President Zine El Abidine Ben Ali can be used by prison gangs in Brazil to coordinate attacks on police.³

North Korea is a place where optimistic dreams of technology-driven liberalism go to die. The Democratic People's Republic of Korea (DPRK) limits the flow of information into, out of, and within the country to maintain control over the population. Radios are hardwired to only receive government-run channels, and foreign media is strictly forbidden. Despite these restrictions,

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North Korea has begun to encourage the use of information technology to increase efficiency and remove an impediment to foreign direct investment.⁴ DPRK defectors who worked in the country's IT sector have called this the "mosquito net" strategy.⁵ The regime plans to reap the positive benefits of the technology while limiting the ideological pollution associated with use of cell phones, the intranet, and Internet.

To mitigate the risk of social unrest, the regime has attempted to integrate information technology into its system of social controls. Cell phones and other communications technology are a material incentive for the North Korean elite, as well as a means of controlling information for the population. Penalties for possession of forbidden technology or the misuse of approved technology are harsh. Although the North Korean government seems confident that this system of bribes, blinders, and bludgeons will allow the DPRK to take advantage of the positive elements of these technologies while minimizing the social impact on the population, the North Koreans privileged enough to access this technology can communicate in ways that are unprecedented in the history of the state.

Bribes: Information Technology as a Material Incentive for North Korean Elite

Cell phones, the intranet, and the Internet are a luxury reserved for the DPRK elite. Just as North Korea isolated the impact of the floods and famine of the 1990s on the most marginalized members of its population, the state prices and controls information technology such that only the most wealthy and privileged, and thus—the regime hopes—the most loyal, will have access to it.

Cell phones are the most common information technology tool in North Korea, but remain limited to the North Korean urban elite. The government-approved Koryolink system offers cell phones that can call within the state, but not outside of it. At this time, approximately two million cell phones are in circulation in North Korea, although Yonho Kim notes that many are used as communications tools by government personnel.⁶ Cell phones are expensive, meaning that only the relatively wealthy can access the technology. Average monthly charges for the phones are around \$13.90 a month, expensive for a country with average GDP of \$2,000 per person.⁷ In addition, the subscriber network is limited to those with the time and money to take time off work, travel to the Communication Technology Management (CTM)

office, and pay any bribes and fees necessary to ensure that their paperwork is processed.⁸

The Koryolink network is largely urban; it covers Pyongyang and all of the cities in the North.⁹ Since cell phones require a power source to work, their use is limited to areas with a reliable energy supply. In rural areas, the North Korean electricity grid is decrepit, and, even if there is cell phone coverage, owning and using a phone is not practical. In these remote areas where electricity is stored in car batteries and used to heat water, keeping cell phones charged is not a priority.¹⁰

Some privileged North Koreans also have access to *Kwangmyong*, the North Korean intranet. The intranet is a closed network; the North Korean government monitors the discussion boards and chat services it offers, and screens and approves any media on the network.¹¹ An even rarer subset of the population will have controlled and monitored access to the Internet. The exceptions to these controls are the super-elite of the state, who have unfettered access to the web. This population may only number a dozen or more families within the North.¹² Their access to information on the world outside North Korea is not a threat to the state's information blockade as they occupy the highest echelons of the DPRK power structure.

Some university students also have controlled and policed access to the Internet. They must apply for access, justifying their need to use the Internet for research on approved topics. The computer facilities are locked, and search histories are monitored.¹³ Pyongyang University of Science and Technology (PUST), a privately funded university in the DPRK, is the exception to this rule. Students at PUST have almost unfettered access to the Internet.¹⁴ There is a limited connection—only one IP address is available—but students do not have to apply for permission to access the Internet.¹⁵ PUST represents an important test case in the use of the Internet in North Korea. It is not clear if the graduates, having been contaminated by foreign influences, will be allowed to move into important positions in the DPRK after graduation or if they will be buried in ministries or sent to overseas posts.

The DPRK government also allows key North Koreans to use the Internet for research or communication with the outside world for state-sanctioned business. This business includes the array of DPRK propaganda websites, including KCNA, as well as tourism websites, and other ventures aimed at bringing in hard currency from outside North Korea. Similarly, members of the



Korean People's Army, Ministry of Foreign Affairs, and other groups whose job entails gathering information on the U.S., ROK, and others can access the Internet for research purposes. These groups are trusted to access the Internet based on their role promoting the state's interests.

Finally, North Koreans abroad representing DPRK missions and consulates, working in international organizations, or running profit centers have access to the Internet based on local restrictions. The missions and profit centers have an ideological minder, an officer responsible for ensuring that the staff behave appropriately.¹⁶ Even when a minder is not present, North Koreans abroad tend to police each other; North Koreans using their computers for unorthodox purposes or caught visiting a local Internet café risk being reported to the state.

Cell phones and the intranet function as toys for the North Korean elite and tools for the DPRK government. In this sense, cell phones are another luxury item that the regime utilizes for its own benefit and allows the wealthy to access as a material incentive. Those who access this technology flaunt it; USB flash drives are worn as a conspicuous symbol of access to technology.¹⁷

Blinders: Information Control and Propaganda

Aside from providing toys for the North Korean elite, the state's control of information technology affords it an opportunity to disseminate propaganda. In Ruediger Frank's unboxing of the North Korean tablet computer, he notes that it comes pre-loaded with the collected wit and wisdom of Kim Il-sung and Kim Jong-il, as well as books by Charles Dickens and Victor Hugo intended to show the bleakness of life in a capitalist society.¹⁸ Koryolink phones reportedly receive daily propaganda text messages from the state.¹⁹

Internet control mechanisms involve limited access to facilities, and surveillance of individual use. The DPRK government monitors most Internet accounts used for business. Inbound communications are checked by a central authority, and can be accessed by the e-mail recipient only if deemed acceptable, usually from a controlled area using a monitored terminal.²⁰ If the sender is not cleared to communicate with the North, the e-mail will not be passed on to the intended receiver, and a "message not delivered" message will be e-mailed back to the sender. While these messages are automated responses in other countries, they are hand-typed in North Korea.

In addition to disseminating state propaganda, these technologies keep information from leaking into or out of the country. Koryolink cell phones alleviate demand for Chinese mobiles, which function near the border using Chinese cell towers and can call outside of the country. Similarly, while it cannot hold a candle to South Korean soap operas, the controlled media on the North Korean intranet can substitute for foreign media that is leaking into the country. The regime is thus able to substitute a constructive technology for a potentially disruptive one.

Furthermore, the value in having a state-run network is that the government can shut down cell phones and pull the plug on the intranet if it becomes a threat to the regime. While governments in Tunisia and elsewhere found themselves at the mercy of social networks run by foreign companies such as Twitter and Facebook, North Korea is not beholden to an externally controlled network.²¹

Bludgeons: Punishments and Social Controls

The advent of the Koryolink system has seen a corresponding crackdown on the use of unauthorized technologies.²² The North Korean government uses detection equipment to track users of Chinese cell phones.²³ Those who use these forbidden mobile devices for business or other purposes have learned to use them away from home and in controlled, short bursts to avoid detection.²⁴ Other coercive measures include strengthened penalties for possession of foreign media. Inspections and penalties for information crimes have been increased as a disincentive for use of verboten media.²⁵ Legal restrictions for access to this technology have likewise been strengthened.²⁶

While information technology has the potential to empower distributed, non-governmental actors, the institutionalized and persuasive system of social controls in North Korea incentivizes risk-averse behavior. The *songbun* hereditary class system in the North continues to determine access to resources and opportunity in North Korea. This system controls access to everything from food to healthcare to education to employment in the DPRK.²⁷ This ensures that those with money in the North are those who have been deemed loyal to the state. While this system is by no means perfect, it means that those with the money and opportunity necessary to access information technology are those with a large stake in the survival of the state for political, economic, or other reasons. Similarly, the *songbun* system means that any disloyalty puts three generations of the family at risk.²⁸



Likewise, the *inminban* system that encourages neighbors to police other neighbors reinforces social controls and discourages the use of technology for destabilizing purposes. While the *inminban* system has weakened, it still discourages the sort of social mobilization that communication technology would otherwise empower.²⁹ Given that almost all access to the Internet in North Korea is from a government-controlled facility, North Koreans are aware that their activity is monitored and moderate their behavior appropriately. If even watching a South Korean drama is a dangerous undertaking, then publicly communicating discontent is unlikely.³⁰ The pervasive fear of being reported by neighbors retards the development of non-government networks.³¹

Even while surveillance networks have deteriorated over the last two decades, monitoring the intranet and Internet is still relatively easy. In China, companies with web infrastructure that includes discussion boards are recommended to employ one monitor/censor for every 50,000 users.³² Since there are a limited number of intranet users in North Korea, a relatively small force of censors would be sufficient to police the entire system. Many surveillance features, such as recognizing search terms, can be automated to control Internet use.

Furthermore, the availability of mechanisms to undermine the state does not mean that there is interest in using them. Many North Koreans, particularly elites who see their future bound with the state as it exists today, view the government control mechanisms as a positive force for security and stability in the DPRK.³³ North Koreans have been raised under a siege mentality that there is a pervasive and unyielding threat from the outside world. Government efforts to keep those forces at bay are viewed by many North Koreans as a good thing.

Even if North Koreans hate the system, they have little to gain by undermining it. Undermining the DPRK's rule would mean being swallowed up by Chinese and South Korean interests. A more realistic goal would be to develop a gray-market business enterprise that would allow them to benefit within the North Korean system, potentially using information technology to circumvent some of the institutional gatekeepers for these business. As Andrei Lankov notes, "the long term interests of the North Korean business class might even coincide with that of the Kim regime and its officials—even though now they see each other as a swarm of parasites."³⁴

The use of communications technology in North Korea thus follows the totalitarian playbook of bribes for the elite, blinders

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for the masses, protecting them from ideologically impure content, and coercive measures to suppress threatening media and reinforce social controls. This system allows the North Korean government to focus on the constructive elements of this technology while minimizing the disruptive implications.

Opportunities

North Korea has attempted to integrate information technology into its system of social controls. Rather than empower distributed actors to undermine the rule of the state, North Korea has ensured that access to information technology is reserved for the elite; the technology limits information into or out of the country; and significant coercive measures exist to disincentivize improper use of the technology.

Bruce Schneier notes three key characteristics that allow dispersed networks to use information technology tools against institutional actors: transparency, oversight (including free press, civil society and other watchdogs), and open access to data.³⁵ These factors allow information technology to act as a check on institutional power. At this time, North Korea stringently polices access to data and lacks even a nascent non-governmental sector to provide oversight over the state.

As T.S. Eliot wrote, “it is impossible to design a system so perfect that no one needs to be good.” Although the DPRK government allows access to information technology based on perceived loyalty to the state and has built-in controls to limit the potential misuse of this technology, North Koreans can now communicate in unprecedented ways, which in turn has altered the way the DPRK government controls information.

The most important shift is that the North Korean government will have to triage surveillance activities. With two million cell phones in operation in the North, the number of conversations in the state has exceeded the ability of the state's security



mechanism to track all of the conversations. North Koreans use their mobile phones approximately as much as their South Korean counterparts.³⁶ Landlines in the DPRK could be easily monitored; they were limited in number, tightly controlled by different bureaucracies in the state, and used much less frequently than cell phones.³⁷ The sheer number of conversations exceeds the ability of the government to police them, and the state security department is likely to focus surveillance on certain parties, probably foreign nationals and ideologically suspect individuals.³⁸

While the number of mouths speaking has overwhelmed the number of ears listening, the information that the speakers can share has also expanded. The ubiquitous USB drives, conspicuous symbols of access to information technology, also allow North Koreans to share anything from economic data to South Korean soap operas.³⁹ Likewise, memory chips in cell phones can be traded and shared, allowing media to be watched on phones at home, in the street, or anywhere else.⁴⁰ DVDs, the traditional means of sharing media, were much easier to track. Officials could shut down power to a unit and check the DVD in the player. USB drives, SD cards, and memory chips are far easier to hide and share.

When using government-approved technologies, North Koreans are becoming information seekers. The very act of looking outside the country for information is unprecedented in the North.⁴¹ For example, the intranet includes state-approved research on science and technology topics.⁴² This is consistent with Kim Jong-un's proclamation that the Internet should be used to harness scientific information from the outside world for development purposes.⁴³

With these changes, the North Korean government has shifted from a goal of total information control to one of voluntary compliance with high penalties for transgression. Under the new system, networks can develop and share information, even if just between privileged classes. This creates a new space for non-government actors that did not previously exist. Unmonitored networks can develop and share a range of data and media easier than ever before. While penalties and social controls disincentivize these activities, space exists in an unprecedented manner.

While the advent of information technology in North Korea is not likely to lead to a radical transformation that empowers distributed actors, it is likely to exacerbate the influence of foreign media. Over the next decade, the combination of markets, generational change, and information technology has the

potential to fundamentally alter the state and creates a strong incentive to integrate North Korea into the dynamic economies of Northeast Asia. While the technology is not likely to be a driver of social instability or unrest in the country, cell phones, the intranet, and the Internet facilitate the spread of foreign media, and enable networks within the state that can be used for other purposes.

Policy Implications

One opportunity presented by the advent of communications technology in North Korea is the possibility to circumvent the control of the state. The goals for these efforts would include subverting control of the government and getting more information into and out of North Korea. Given that the North Korean state controls content and monitors discussion forums on the intranet, as well as the limited number of North Koreans with access to the Internet, the best tool for this activity would be mobile phones. Although this application of mobile technology is certainly possible, circumvention efforts have a high risk of provoking a crackdown on mobile phone users by the North Korean government.

For NGOs and governments, the strong and laudable desire to encourage change in North Korea by widening the exposure to the outside world is likely to result in a crackdown on the North Koreans who are targeted by it and an ensuing shutdown of humanitarian channels with North Korea. In response to an information campaign involving leaflets organized by South Korean NGOs, North Korea executed several people possessing the leaflets and shut down diplomatic relations with South Korea.⁴⁴ Cell phones were banned for four years after the regime attributed an explosion at a railway station in the city of Ryongchon to a cell phone activated bomb.⁴⁵ It is hard to imagine North Korea shutting down the network at this stage, but the DPRK could increase prices to limit the number of customers, scale back future plans to expand the network, or take other measures to tighten controls over cell phones and IT. While the sensitivity that North Korea displays toward these information campaigns indicates a weak point for the regime, overt circumvention campaigns are just as likely to burn bridges, at both the state and non-state levels, to North Korea as build them.

Alternatively, since the development of information technology in North Korea has the potential to encourage the long-term transformation of the state, a strategy for governments and non-



governmental organizations could be to engage with that sector to encourage its development. These engagement opportunities are available to a variety of different actors, ranging from for profit business ventures to NGO capacity building training projects. The challenge to these engagement projects is that the collaboration is controlled by the North Korean state. Outsourcing operations will generally involve working with a North Korean partner who will act as an intermediary for all production in-country. The outsourcing company will have no regular presence on the ground to oversee the operations. This can be frustrating for the company and limits the transformative impact of these programs in the DPRK.

Attempting to circumvent the DPRK information technology system is just as likely to shut down communication channels as build them, and investment in the North Korean IT sector is risky due to sanctions, weak governance, and other risks. The most effective strategy to respond to these changes in North Korea may be to find ways to feed technical data that outlines best practices for economic development into the DPRK intranet. Topics for this data could range from public health, best practices in agriculture, energy efficiency and development, economic literacy, banking, etc. As mentioned before, importing this data into the North has been blessed at the highest level of the state by Kim Jong-un himself. This data would support economic

development in North Korea, build collaboration between North Korea and the outside world, and increase the reliance on information technology in the state.

The advent of information technology in North Korea is a significant event. A fundamental part of the state's security strategy rested in the keeping its population isolated and uninformed. That said, the DPRK government is cognizant of the disruptive potential of information technology, and have attempted to integrate access to cell phones, the intranet, and the Internet into its system of social controls.

Information technology is not a Trojan horse that the North Koreans have mistakenly let through their gates. Rather than expecting cell phones, the intranet and the Internet to induce a radical change in the North Korean state, policy makers should adopt a more cautious approach. Overt support for information technology as a tool for circumventing state controls will result in further restrictions. Investing in technology in North Korea is very possible, but limited in impact due to the control mechanisms of the state, international sanctions, and the risks associated with investing in North Korea. A modest strategy would be to feed information into the DPRK that will support development that necessitates links to institutions abroad and integration with the region.



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